اسئلة سنوات
c++

فاينل ٢٠٢٠-٢٠٢١

أسئلة سنوات ميد

2019 فصل اول + ثاني

1-what is the output of the following code?

```cpp
int a = 1;
char a1 = 'a';
string s1 = "";

cout<< a1 + 8 <<" "<< s1 + a1 <<" "<< s1 + 'r'<<" "<<
s1 + (char)(120) <<" "<< s1 + s1 <<endl;
```

a- x 150 a r   **b-** 105 a r x   **c-** r a x 105   **d-** a r 105 x

---

2-Given the following code, choose the correct answers for each blank that the code changes all the alphabets in string st to lowercase letters.

```cpp
string st;
    int x = 0;
    while (x < st.length()) {
        if (   1   ) {
            st[x] =   2  ;
        }
    }
```

```
1- a- isalpha(st[x]) && isupper(st[x])
   b- toupper(st[x])
   c- isalpha(st[x])

2- a- st[x] + 32
   b- st[x] - 32
   c- toupper(st[x])
```

3- Given that st is a string that consists of at letters. Choose the correct answer from the available options such that the following program will print the last 3 letters of string st only

```cpp
string st;
int L = st.length();
int x = 0;

while (x < L && x >= 0) {
    if (      1      ) {
        cout << st[x];
    }
    x++;
}
```

a- (x >= L - 3)   b- (x >= L)   c- (x < 3)

4- Given that the x and m are integer variables with the following values

x=0 and m=5. What is the value of x after executing the following code:

```cpp
while (m < 10) {
    m++;
    x = x + 5;
}
```

a- 30   b- 25   c- 20   d- 15

5- what is the output of the following code?

```cpp
string st1 = "ABCDEJ";
string st2 = "ABCY";
string st3 = "ABC89";
string st4 = "";
if (st2 >= st1) {
    st4 += st2[0];
    if (st3 >= st2) {
        st4 += st1[2];
        if (st1 != st3)
            st4 += st3[3];
    }
}
cout << st4 << endl;
```

answer :

a-None of the other choices

b-AC8

c- AC

d-A

6– what is the output of the following code,

given that: x=2*y/(z+4) , y=50 , z=6;

```cpp
switch (x) {
    case 10:
        cout << "Level1!" << endl;
        break;
    case 15:
        cout << "Level2!" << endl;
        break;
    case 20:
        cout << "Level3!" << endl;
    case 25:
        cout << "Level4!" << endl;
    default:
        cout << "No match!" << endl;
}
```

a– No match! b– Level1! c– Level3! d–Level4! e–Level2!

7– Choose the correct answers for each blank such that following program displays

1 3 5 7 9

```cpp
int w = 1;
while (w < 10) {
    if (        ) {
        cout << w << " ";
    }
    w++;
}
```

a- (w % 2 == 1 || true)   b- (w % 2 != 0 && true)

c-(w % 3 == 0)   d- (w<10 && true)

8– Given that num is an integer variable with the value 13567. Which of the following formulas will generate 5?

a- num%100/10

b- num%100%10

c- num/1000%10

d- num/100%10

e- num%100/10

9– what is the number of logical errors in the following code that **takes fullName, two grades(G1,G2)** of **25** students. and **print** the **fullName** and the **average** (of G1 and G2) for all students?

```cpp
double G1, G2;
double average = 0;

string fullName;// FirstName LastName
double numOfStudents = 0;

while(numOfStudents<25){
    cin >> fullName;
    cin >> G1;
    cin >> G2;

    average = G1 + G2 / 2;

    cout << fullName << endl;
    cout << "The average is: " << average;

    numOfStudents++;
}
```

a- Four   b- Five   c- Two   d- one   e- Three

10– **Given that y and z are variables of type double. What is the result of the following expression given that y = 1.5 and z = 2.5?**

```cpp
cout << ceil(2 * y + exp(y / z));
```

a- 5.5   b- 5   c- 4.82   d-2.49

11- What is the output of the following code?

```cpp
string St1 = " Let's Do it Rigth, Good Luck1!8";
bool b1 = isalpha(St1[18]);
bool b2 = isdigit(St1[31]);
bool b3 = isalnum(St1[8]);
bool b4 = isalpha(St1[9]);
if (b1 == b2) {
    cout << "Stage#1\n";
    if (b1 == b3) {
        cout << "Stage#2\n";
        if (b1 == b4)
            cout << "Stage#3\n";
    }
}
```

a- Stage#1   b- Stage#1   c-Stage#2   d-None of this

   Stage#2   Stage#3

12- Choose the correct answer such that the code implements the function: $cos^4(2x) + sin(2y)$?

```cpp
int x = 10, y = 20;
cout << ▮▮▮▮▮ ;
```

a-pow(cos(2*x * PI/180),4) + sin(2*y * PI/180)

b-pow(cos(2*x) * PI/180,4) + sin(2*y * PI/180)

c-pow(cos(2*x),4) + sin(2*y)

d-pow(cos(2*x * 180/PI),4) + sin(2*y * 180/PI)

e-pow(cos(2*x) * 180/PI,4) + sin(2*y * 180/PI)

13- The following code welcomes the students to the Ethics101 course, that has the course number 0703101. It accepts the full name of 5 students (firstName+lastName) and prints them on the screen. How many logical and syntax errors are there in this code?

```cpp
#include<iostream>
#include<string>
using namespace std;
int main()
{
    int numofstudents = 5;
    string studentFullName;
    cout << setw(30) << "Welcoem to Ethics 101, this
course has number " << 0x0703101 << endl;
    while (nofstudents != 0)
    {
        cin(getline, studentFullName);
        cout << studentFullName << endl;
        --numofstudents;
    }
    return 0;

}
```

a- 2 syntax errors + 2 logical errors

b- non of these choices

c- 1 syntax error + 2 logical errors

d- 2 syntax errors + 1 logical errors

e- 3 syntax errors + 1 logical errors

14- what is the output of the following code ?

```cpp
string st = "";
char o = 'o';
char e = 'e';
int count = 2;
while (count <= 10) {
    if (count % 2 == 0)
        st += e;
    else
        st += o;
    count++;
}
cout << st << endl;
```

a- oeoeoeoeo b- oeoeoeoeoe c- eoeoeoeoe d-eoeoeoeoeo

15- how many bytes in memory does the declaration of these variable take ?

```cpp
double c1, c2, c3, c4, c5;
int x, y, z, a, b, c, d;
```

a- 24   b- 17   c- 30   d- 38   e- 68

16- choose the correct answer from the multiple choices in the blank below such that the code prints the number 1:

cout << ☐

a- (char)(49)   b- (string)(0x49)   c- (string)(1)

d- (char)(0x49)   e- (string)(49)   f- (char)(1)

17-choose the correct answers from the multiple choices for each blank such that the longest output of the following code will be 'AAAA' `int v;`

```cpp
cin >> v;

switch (v)
{
    case 1: cout << "A";
    case 5: cout << "A";
            1
    case 4: cout << "A";
    case 3: cout << "A";
    case 6: cout << "AA";
            2
    default:cout << "A";
}
```

a – leave empty , break

b – leave empty , leave empty

c – break , leave empty

d – break , break

18- choose the correct answer from the multiple choices in the blank below such that the code generates random numbers between -8 and 76:

```cpp
srand(time(0));
int myRandom =
```

a) -8 + rand() % 77   b) -8 + rand() % 76

c) -8 + rand() % 86   d) -8 + rand() % 85

f) none of these   g) -8 + rand(77)

19) what does this code do ?

```cpp
#include<iostream>
#include<string>
#include<fstream>
using namespace std;
int main()
{
        ifstream mystream1("file1.txt");
        ofstream mystream2("file2.txt");
        string sentence;
        string newSentence = "";
        while (!mystream1.eof()) {
                getline(mystream1, sentence,(char)tolower('S'));
                newSentence += sentence;
        }
        mystream2 << newSentence;


}
```

a- Read all sentences from the file1. Remove the letter 's' from the sentences.

Write the new sentences into file2.

b- Read all sentences from the file1. Remove the letter 'S' from the sentences.

Write the new sentences into file2.

c- Read all sentences from the file1. convert the letter 'S' to 's' from the sentences.

Write the new sentences into file2.

d- Read all sentences from the file1. Remove the letter 's' and 'S' from the sentences.

Write the new sentences into file2.

1	b	11	d
2	1) a , 2) a	12	a
3	a	13	e
4	b	14	c
5	d	15	e
6	b	16	a
7	b	17	d
8	d	18	d
9	c	19	a
10	b		

اسئلة سنوات ميد

2020 فصل اول + ثاني

1-what is the value of variable Z ? x = 2.4 , y = -3.9

$$Z = 4\lceil x \rceil - 5\lfloor y \rfloor + min(x, y) + max(x, y) - abs(-2.9)$$

Note:

$\lceil N \rceil : N\ is\ rounded\ up\ to\ its\ nearest\ integer.$

$\lfloor N \rfloor : N\ is\ rounded\ down\ to\ nearest\ integer.$

a) -25.3   b) -24.4   c)27.6   d)28.4

e)-28.4   f)-27.6   g)24.4   h)25.3

2- this code asks the user to insert a number between 1 and 4 (1,4 are included
And print out its square value. A wrong entry causes this statement to be
printed "Wrong entry". Fill the missing line with the correct instruction.

// prompt the user to enter an integer

int number;

cout<<"Enter an integer:";

cin>>number;

```
┌─────────────────────────────────────┐
│                                     │
└─────────────────────────────────────┘
```

    cout<<number<<"Square value = "<<number*number<<endl;

else

    cout<<"Wrong Entry"<<endl;

a) if(number >=1 && number < 5)   b) if(number > 1 && number < 5)

c) if(number >= 1 && number < 4)   d) if(number>=1 && number<=5)

3- Which of the following codes will lead to i = 4, j = 4 ?

a) int i = 3;   b) int i = 4;   c) int i = 4;   d) int i = 4;

cout<< --i;   cout<<++i;   cout<< --i;   cout<< ++i;

int j = ++i;   int j = --i;   int j = i++;   int j = i--;

4- Given the following code, select from the available options for each blan such that the code prints "Skills" on the screen

string w = "Welcome to the Computer Skills";

for(1   **;**   2   **; i++)**

{

   cout << w[i];

}

1- a) int i = 2   2- a) i <= w.length() -3

b) int i = 0   b) i <= 4

c) int i = 1   c) i <= 6

d) int i = w.length() – 7   d) i <= 5

e) int i = w.length( ) – 8   e) i <= w.legnth( )

f) int i = w.length( ) – 5   f) i <= w.length( ) – 1

g) int i = w.length( ) – 6   g) i <= w.length( ) – 2

5- Choose from the blanks below the correct choices such that the code outputs the following answers:

- if n = 1, its outputs 0

- if n = 4, its outputs 64

- if n = 2, its outputs 8

- if n = 3, its outputs 27

```
switch( n ) {
        case 1: m = 0;              1
        case 4: m = 0;              2
        case 2: m = n * n ;         3
        case 3: m = n * n * n;      4
        default: m  = -1 ;
}
```

1) a) break   2) a) break

   b) leave empty   b) leave empty

3) a) break   4) a) break

   b) leave empty   b) leave empty

6) What is the content of variables x and y after the execution of the
following code?

```
int x = 22;
int y = 35;
(x < y) ? x++ : --y;
if( ++y % 2 == 0)
    y++;
else
    x--;
```

a) 22 35
b) 31 35
c) 22 37
d) 22 33
e) 21 36
f) 23 37

---

7) what is the content of s after the execution of the code?

```
int x = 0.9, y = 35;
char x1 = 'A', x2 = 'B', x3 = 'C';
string s;
y += x2;
x3 +=40;
s += x2;
s += x3;
```

a) CB   c) BK   e) CJ

b) BC   d) KB

8) The following code is supposed to prompt each student in a class of 30 students to enter his full name (first last) and two grades. The program calculates the average of these two grades for each student and prints out his average and his full name. However, there are errors in the code. Find the number and type of errors in code?

```
string fullName; //firstname lastname

double grade1, grade2;
double average;

for (int x = 0, x <= 30; x++) {
    cin >> FullName;
    cin >> grade1, grade2;

    average = Grade1 + grade2 / 2;
    cout << fullName << " " << average;
}
```

a) Two syntax and two logical errors

b) Four syntax and two logical errors

c) one syntax and two logical errors

d) Two syntax and one logical errors

e) Four syntax and three logical errors

9) Choose the correct statement to complete the code below. Assume the following :

- The code receives an input of type double from the user and stores in a variable called "**distance**"

- The input value represents a certain distance in "**Km**".

- The purpose of the code is to display the distance in "**miles**". The number of digits displayed in the fraction side must be always **8.**

- **1 mile = 1.61 Km**

```cpp
if (distance < 0.0)
    cout << "Negative Distance" << endl;
else
```

1

a) cout<<fixed(8) <<setprecision( )<<distance/1.61;

b) cout<<setprecision(8)<<distance/1.61;

c) cout<<fixed<<setprecision(8)<<distance/1.61;

d) cout<<fixed<<distance/1.61;

e) cout<<setprecision(8)<<showpoint<<distance/1.61;

f) cout<<showpoint<<distance/1.61;

10) What is the equivalent C++ expression to express the following function ?

$$ln \sqrt{log(20) + e^{10}}$$

a) log (sqrt (exp (- (10 + log10(20)))))

b) log10 (sqrt (exp(10) + log(20)))

c) log10 (sqrt (exp(-10 + log (20)))

d) log (sqrt(exp(10) + log10(20)))

e) log10(sqrt (exp (-(10+log(20)))))

f) log (sqrt (exp (-10 + log10(20))))

---

11) which of the following inputs will lead to this output sequence :
011001

```cpp
string s1, s2;
cin >> s1 >> s2;
cout << (s1 == s2) << (s1 != s2) << (s1 <= s2)
     << (s1 >= s2) << (s1 > s2) << (s1 < s2);
```

a) s1 = "ade" , s2 = "dEx"

b) s1 = "ade" , s2 = "ade"

c) s1 = "dde" , s2 = "dEx"

d) s1 = "ade" , s2 = "DEx"

12) Given the code below, select from the available options for each blank such that the code finds the smallest digit in the string **q** and stores it in variable **min**.

Note: The ACII code for the '}' character is larger than the ASCII code for 'z' , 'Z' and '9' character

Note: The ASCII code for the ' ' character is smaller than the ASCII code 'z' , 'Z' and '9' characters

```
char min = '}';
char max = '';

for (int i = 0; i < 21; i++)
{
    if (    1    &&    2    )
        min = q[i];
}
```

1: a) q[i] > max   b) q[i] < min   c) q[i] > min   d) q[i] < max

2: a) isupper(q[i]) b) islower(q[i]) c) isdigit(q[i]) d) true

13- what does the following code sinppet do? s1,s2 are strings

```cpp
int j = 0;
getline(cin, s1);
s2 = s1;

for (int i = s1.length() - 1; i >= 0; i--)
{
    s2[j] = tolower(s1[i]);
    --j;
}
```

a) copy the content of s1 to s2 after converting to uppercase

b) copy the content of s1 to s2 in reverse order after converting to lowercase;

c) copy the content of s1 to s2

d) copy the content of s1 to s2 after converting to lowercase

e) copy the content of s1 to s2 in reverse order after converting to uppercase

14) Which of the following is a correct identifier in C++?

a) int++

b) int

c) integer8

d) 7integer

15) The following code prompts the user to input the humidity value and prints out if it is comfortable or not according to the table given below. Using this table till in blanks to complete the code.

Humidity range	comfort
[0 – 30]	Uncomfortably dry
(30 – 60]	Comfortably
(60 – 100]	Uncomfortably wet

```cpp
double humidity;
cin >> humidity;

if (            1            )
    cout << "Uncomfortably dry\n";

else if (            2            )
    cout << "Comfortable\n";

else if (            3            )
    cout << "Uncofortable wet\n";
```

1: a) humidity >= 0 && humidity < 30   b) humidity >= 0 || humidity < 30

   c) humidity >= 0 && humidity <= 30   d) humidity > 0 && humidity <= 30

2: a) humidity >= 30 && humidity < 60   b) humidity >= 30 || humidity < 60

   c) humidity >= 30 && humidity <= 60   d) humidity > 30 && humidity <= 60

3: a) humidity >= 60 && humidity < 100   b) humidity >= 60 || humidity < 100

   c) humidity >= 60 && humidity <= 100   d) humidity > 60 && humidity <= 100

16) Choose the correct statement to complete the code below.

First, the code generates a random month number (01 to 12) and stores it using two integers "k1" and "k0".

Next, the code requests the user to enter his birthday as an integer in the format "**yyyymmdd**" and stores it in an integer variable 'N'.

For example, if user birthday is 9/7/2020, then he should enter 20200709 which is stored in 'N'.

Lastly, the code compare the random month number with the month from the user birthday to display "win" if they are equal.

Otherwise, the code display "lose".

```cpp
int k1 = rand() % 2;
int k0;

if (k1 == 0)
    k0 = 1 + rand() % 9;
else
    k0 = rand() % 3;

cout << "Enter your birthday" << endl;
cin >> N;

if (                          )
    cout << "Win";
else
    cout << "Lose";
```

a) ((N/100)%10==k1)&&((N/10)%10==k0))

b) ((N/100000)%10==k1)&&((N/10000)%10==k0))

c) ((N/10000)%10==k1)&&((N/1000)%10==k0)

d) ((N/1000)%10==k1)&&((N/100)%10==k0)

17) Given the following if-else, fill in blanks to complete the equivalent switch statement:

```cpp
int x, y;
cout << "Enter two intergers:\n";
cin >> x >> y;

char op;
cout << "Enter + or a or A for addition.\n";
cout << "Enter - or s or S for subtraction. \n";
cout << "1nter * or m or M for multiplication.\n ";
cin >> op;

if (op == '+' || op == 'A' || op == 'a')
    cout << x + y;
else if (op == '-' || op == 'S' || op == 's')
    cout << x - y;
else if (op == '*' || op == 'M' || op == 'm')
    cout << x * y;
else
    cout << "undefined operation\n";


switch (op) {
    case '+':            [ 1 ]
    case 'A':
    case 'a':            [ 2 ]

    case '-':
    case 'S':
    case 's': cout<<x-y<<endl; break;

    case '*':
    case 'M':
    case 'm': cout<<x*y<<endl; break;

    default:            [ 3 ]
}
```

1) a) cout<<x+y<<endl b) break c) leave empty

2) a) cout<<x+y<<endl b) cout<<x+y<<endl break; c)empty

3) a) cout<<"undefined op\n"; b)leave empty c) break;

---

18) what is the range of m after applying this code?

```cpp
srand(time(0));

int i = 20 + rand() % 25;
int j = i + rand() % 10;
int k = 5 + rand() % 11;
int m = j - k;
```

a) 5 to 48   b) 15 to 38   c) 5 to 38   d) 15 to 48

---

19) what is the output of the following C++ code?

```cpp
int x = 1;
short int i = 2;
float f = 3;
if (sizeof((x == 2) ? f : i) == sizeof(float))
    cout << "float\n";
else if (sizeof((x == 2) ? f : i) == sizeof(short int))
    cout << "short int\n";
else
    cout << "No match" << endl;
```

a) int   b) short int   c) double   d) float

20) Choose the correct statements to complete the code below.
The code is responsible for receiving students names and grades for
19 subjects. For each student, the program receives subjects. After
that, the program display the student average grade as shown in the
example below.

The program ends when the first character of the student name is '—'
without computing the average for this student.

Assume that variables "sum" and "grade" are defined as int, and
variable "grade" is used to read student grades. Also assume that
variable "x" is defined as a string and is used to read student name.

- **Example:**

if the name of the first student is "John" and his grades for the 19 subjects are :

70, 70, 72, 72, 74, 74, 76, 76, 78, 79, 80, 82, 82, 84, 84, 86, 86, 88, 88

Average = 79

Then the program continues to receive the name and grades for the second
student and so on until the entered student name starts ' — '

```cpp
cout << "Enter name then press Enter" << endl;
cin >> x;
```

1

```cpp
    sum = 0;
```

2

```cpp
        cout << "Enter grade then press Enter" << endl;
        cin >> grade;
        sum += grade;
    }
    cout << "Average = " << sum / 19.0 << endl;
    cout << "Enter name then press Enter" << endl;
    cin >> x;
}
```

Answers for 1 and 2 :

a) while(x[0] == ' – ')

b) for(int i=0; i <= 21 ; i++)

c) for(int i= 1; i < 20 ; i++)

d) for(int i=0; i < 20; i++)

e) while (x > 0)

f) for(int i = 0; i <= 20;i++)

g) while(x[0] != ' – ')

h) while(x >= 0)

i) for(int i=0 ; i < 19 ; i++)

j) while(x[x.size()-1] != ' – ')

k) while((x != 0) && (x < 0))

l) while(x != -1)

m) while(x[x.size()-1] == ' – ')

1	C	11	A
2	A	12	1-b 2-c
3	B	13	B
4	1-g 2-f	14	C
5	1-a 2-b 3-b 4-a	15	1-c 2-d 3-d
6	F	16	D
7	C	17	1-c 2-a 3-a
8	E	18	A
9	C	19	D
10	D	20	1-g 2-i

اسئلة سنوات

ميد

2020 صيفي جديد

1) complete the code below by choosing the correct answers from the multiple choices such that the output has similar formating to the output shown below.

```cpp
int x = 0;
do {

    if (x == 0);
    [        1        ]
    else if (x == 1);
    [        2        ]
    else if (x == 2);
    [        3        ]

    cout << setw(15) << rand() / 1024.0
         << setw(15) << rand() / 1024.0
         << setw(15) << rand() / 1024.0 << endl;
    x++;

} while (x < 3);
```

```
      25.75293              6.05664             12.5791
13.5048828       24.8583984       25.5781250
      23.5615              19.7334              9.2109
```

1)   a) cout<<setprecision(5)<<right;

       b) cout<<fixed<<setprecision(5)<<left;

       c)cout<<fixed<<setprecision(5)<<right;

       d)cout<< setprecision(5)<<left;

2)   a) cout<<left<<showpoint<<setprecision(9);

       b) cout<<right<<showpoint<<setprecision(9);

       c)cout<<right<<setprecision(9);

       d)cout<<left<<setprecision(9);

3)   a) cout<<setprecision(4)<<right;

       b) cout<<fixed<<setprecision(4)<<left;

       c) cout<<fixed<<setprecision(4)<<right;

       d) cout<<setprecision(4)<<left;

2) choose the correct choice from the blanks below such that
code|| is equivalent to code|:

//code|:

```cpp
switch (n) {
 case 2:
 case 4:
 case 8:
 case 10: cout << n * 100 << endl; break;
 case 3:
 case 6:
 case 9: cout << n * 10 << endl; break;
 case 1:
 case 5:
 case 7: cout << n * 1000 << endl; break;
 defualt: cout << "out of range" << endl;
}
```

// code||:

```cpp
if (           1           ) {

    if (       2       )
        cout << n * 10;

    else if (       3       )
        cout << n * 100;

    else
        cout << n * 1000;
}
else
    cout << "out of the range" << endl;
```

1)   a) ((n<10) && (n>0))   b) ((n<=10)&&(n>=0))

     c) ((n<10)||(n>0))   d) ((n<=10)&&(n>0))

2 & 3) a) (n%2==0) b) (n%2!=0)   c) (n%3==0)   d)(n%3!=0)

3) which one of the following input values gives us a certain true for this statement:

```
if( (x>5 || y<z) && (y != 0 || x+z%3==0) )
```

a) int x = 4, y = 2+rand()%5, z = 5;

b) int x = 7, y = rand()%5, z = 5;

c) int x = 4, y = 2+rand()%4, z = 5;

d) int x = 7, y = rand()%2, z = 4;

4)select from the available options for each blank such that the following code prints the hundreds digit then the thousands digit:

int number;

cin>>number;

| 1 |

cout<<number%10;

| 2 |

cout<<number%10;

1) a) number = number / 100   2) a) number = number / 1000

   b) number = number % 100   b) number = number % 10

   c) number = number /10   c) number = number/10

   d) number = number /1000   d) number = number % 1000

5) suppose we want to store the value 1.0 into a double variable d. which of the following would not work ?

a) all of them will work

b) d = 1;

c) d = 3.0 / 2 - 0.5 ;

d) d = 3/2;

e) d = 2 – 0.5 – 0.5 ;

---

6) what is the content of the variable x and y after executing the following code?

```
double x = 14, y = 2.8;
(y < x) ? x -= 10 : y *= 2;

if (y > x)
    x += 20;
else
    y += 3.9;
```

a) x = 16, y = 56

b) x = 4 , y = 6.7

c) x = 6 , y = 6.7

d) x = 4 , y = 10.92

7) fill in the blank to get a random value between 16 and 24 :

int i = 20 + rand() % 5;

// blank

a) int j = i + rand() % 8;   b) int j = i - rand() % 8;

c) int j = i - rand() % 5;   d) int j = i + rand() % 5;

8) select from the available option for each blank such that the value stored in variable number is between 3 and 25 inclusive:

int number = $\boxed{1}$ + rand () % $\boxed{2}$

1) a) 1   b) 3   c) 25   d) 2

2) a) 25   b) 24   c) 3   d) 23

9) if double x = -2.5 , y = -3.1

Which of sequence of instructions gives an output (-2):

a) x=ceil(x)   b) y=floor(y)   c) y=ceil(y);

y=floor(y)   x=abs(x)   x=floor(x);

cout<<max(x,y)   cout<<max(x,y);   cout<<min(x,y);

d) x=floor(x)   e) x=ceil(x)

y=abs(y)   y=floor(y)

cout<<max(x,y)   cout<<min(x,y)

10) the following code prompts the user to input an angle in degrees, prints out its cosine with 3 digits after the decimal point in a field of width 6. Fill in the blanks to complete the code.

const double PI = 3.14159265359;

double angle;

cin>>angle;

cout<< [ ]

a) setw(6)<<fixed<<setprecision(3)<<cos(angle*(PI/180));

b) setw(6)<<fixed<<setprecision(3)<<cos(angle);

c) setw(6)<<fixed<<setprecision(3)<<cos(angle)*(PI/180);

d) setw(6)<<fixed<<setprecision(3)<<cos(angle*(180/PI));

---

11) which of the following statement calculate the average of a,b,c,d?

a) a – b + 0 * c / 4 + 2 * b + c + d * 1 / 4

b) (a – b + 0 * c / 4 + 2 * b + c + d) * 1 / 4

c) a – b + (0 * c / 4) + 2 * b + c + d * (1 / 4)

d) (a – b + (0 * c / 4) + 2 * b + c + d) / 4

12) what is the content of the variable mystring after executing the following code successfully ?

```cpp
string str1="This is my first program";
string str2="I am a programmer";
string str3="I am an engineer";
string mystring = "";
if (str1 > str2)
    mystring += str1[8];
if (str2 <= str3)
    mystring += str3[3];
if (str1 != str3)
    mystring += str2[5];
```

a) Imm   b) m m   c) mm   d) mma   e) empty

13) The following code prompt the user to enter 10 character and concatenate them into one string. Fill in the blanks to complete the code.

```cpp
char ch;
[ 1 ]
do{
    cin>>ch;
    mystring+=ch;
    [ 2 ]
}while(i<=10);
```

1) a) int i = 0   b) int i = 1   c) int i =10   d) int i = -1

2) a) i++   b) i--

14) Given the following code. Fill in the blanks to complete the code that makes the content of str1 "DADADADADA" after code.

```
string str1 = "";

char ch1 = 'D' , ch2 = 'A';

int count = 1;

while (            1            )

{

        if(count%2==0)

                    2

        else

                    3

        count++

}
```

1) a) count < 10   b) count > 10   c) count <= 10   d) count <= 9

2) a) str1 = ch2   b) str1 = ch1   c) str1+=ch1   d) str1+=ch2

3) a) str1 = ch2   b) str1 = ch1   c) str1+=ch1   d) str1+=ch2

15) Which of the following codes will lead to k = 9:

a) int i = 4;

int j = 5;

cout<< --i;

int k = j++;

k -= i ;

b) int i = 4;

int j = 5;

cout<< --i;

int k = j++;

k += i ;

c) int i = 5;

int j = 4;

cout<< --i;

int k = ++j;

k += i ;

d) int i = 5;

int j = 4;

cout<< --i;

int k = ++j;

k -= i ;

16) Select the instructions that give 101 as an output

```
char X='v', y='S', z='7';
```

cout<< [1] << [2] << [3] ;

1) a) islower(X)   b) isupper('x')   c) toupper(X)   d) tolower(X)

2) a) islower('y')   b) isupper('y')   c) toupper(y)   d) tolower(y)

3) a) islower(z)   b) isupper(z)   c) todigit(z)   d) isdigit(z)

17) The following code prompts the user to enter Vitamin D3 test result and prints out the diagnosis according to the given table.

If the D3 level is less than '0' it displays an invalid value.

D3 level	Diagnosis
0 ≤ D3 < 30	Deficient
30 ≤ D3 < 39	Insufficient
39 ≤ D3 < 80	Sufficient
80 ≤ D3	Toxic

```
if (          1          )
    cout << "Deficien.\n";
else if (          2          )
    cout << "Insufficient.\n";
else if (D3>=39 && D3<39)
    cout << "Toxic.\n";
else if (          3          )
    cout << "Toxic.\n";
else
    cout << "an invalid value.\n";
```

1) a) D3>0 && D3<=30   b) D3<=0 && D3>30

   b) D3>=0 || D3<=30   d) D3>=0 && D3<30

2) a) D3>=30 && D3<39   b) D3<=30 && D3>39

   b) D3>=30 || D3<=39   d) D3>30 && D3<=39

3) a) D3 < 80   b) D3 > 80

   c) D3 >= 80   d) D3 <= 80

18) What is the value that will be stored in the variable result, given that x = 4.3, y = −8.2?

double result = $4\lceil y \rceil - 5\lfloor x \rfloor + min(x, y) + max(x, y) - |-2.9|$

Note:

$\lceil N \rceil : N$ *is rounded **up** to its nearest integer*.

$\lfloor N \rfloor : N$ *is rounded **down** to nearest integer*

      a) -58   **b) 58**   **c) -58.8**   **d) 59**

19) Suppose we have the following switch statement:

```
short n = (m * 9 / 7) ;
switch( ?? ){
    case 0 : cout<< n ;         break;
    case 1: cout<< n*n;         break;
    case 2: cout<< n*n*n;       break;
    case 3: cout<< n*n*n*n;     break;
}
```

Which of the following statements can be used inside the switch condition such that switch remains syntactically correct?

(maybe more thant one correct answer)

a) static_cast<double>(n)

b) static_cast<long long>(n)

c) static_cast<float>(n)

d) n

1	1) c 2) a 3) c	11	D
2	1) d 2) c 3) a	12	D
3	B	13	1)b 2)a
4	1) a 2) c	14	1)c 2)d 3)c
5	A	15	C
6	B	16	1)a 2)b 3)d
7	C	17	1)d 2)a 3)c
8	1)b 2)d	18	C
9	A	19	B & d
10	A	20	–